Federal Democratic Republic of Ethiopia

☞ EDICT OF GOVERNMENT ☜

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ET 658 (2001) (English): FOOD BARLEY-SPECIFICATION

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ETHIOPIAN STNADRAD

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Foreword

This Ethiopian Standard has been prepared under the direction of the Technical Committee for Cereals, pulses and derived products (TC 11) and published by the Ethiopian Standards Agency (ESA).

The standard is a reaffirmation for reprint of the Ethiopian Standard ES 658:2001, Food barley - Specification, with some editorial changes without altering the technical contents in the former text.

Food barley — Specification

1 Scope

This Ethiopian Standard specifies the requirements for grading unprocessed barley (Hordeum Vulgare L) ready for human consumption.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Ethiopian Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Ethiopian Standard are encouraged to investigate the possibility of applying the most recent editions of the Ethiopian Standards indicated below. Registers of currently valid standards are maintained in the Quality and Standards Authority of Ethiopia.

ES 667:2001, *Cereals – Determination of impurities.*

ES ISO 520:2001, *Cereals and pulses – Determination the mass of 1000 grains.*

ES ISO 711:2001, *Cereals and Cereal products – Determination of moisture content /Basic reference method* .

ES ISO 712:2001, *Cereals and cereal products – Determination of moisture content /Routine reference method/.*

ES ISO 5223:2001, *Test sieves for cereals.*

ES ISO 6322-1:2001, *Storage of cereals and pulses- Part 1: General recommendations in keeping cereals.*

ES ISO 6322-2:2001, *Storage of cereals and pulses- Part 2: Essential requirements.*

ES ISO 6322-3:2001, *Storage of cereals and pulses- Part 3: Control of attack of pests.*

ES ISO 6639-1:2001, *Cereal and pulses – Determination of hidden insect infestation* - Part 1: General principles.

ES ISO 6639-2:2001, *Cereal and pulses – Determination of hidden insect infestation - Part 2: Sampling.*

ES ISO 6639-3:2001, *Cereal and pulses – Determination of hidden insect infestation - Part 3: Reference method.*

ES ISO 6639-4:2001, *Cereal and pulses – Determination of hidden insect infestation - Part 4: Rapid method.*

ES ISO 6644:2001, *Cereals and milled cereal products – Automatic sampling by mechanical means.*

ES ISO 7971:2001, *Cereals – Determination of bulk density, called "mass per hecto litre" /Reference method/.*

ES ISO 7971-2:2001, *Cereals – Determination of bulk density called "mass per hecto litre". (Routine method).*

ES ISO 13690:2001, *Cereals, pulses and milled products – Sampling of static batches.*

3 Definitions

For the purpose of this standard the definitions in ES 668 and the following shall apply.

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3.1
blighted barley
barley that contains more than 4.0% of fungus damaged or mould damaged kernels

3.2
ergoty barley
barley grains infested with dried Scleortuim of fungus claviceps purpurea

3.3
garlicky barley
barley that contains three or more green garlic bulblets or an equivalent quantity of dry or partly dry bulblets in 500 grams of barley

3.4
mouldy barley grain
barley grain whose moulds visible to the naked eye on one-third of the surface of the grain

3.5
impurities
all organic and inorganic materials including broken, shrunken, diseased, insect damaged grains of barley, other seed grains and the like.

4 Classification

Food barley grains are classified by color as follows:

4.1 White food barely

This class include only white colored barley grains

4.2 Black food barely

This class include only colored barley grains

4.3 Mixed barley

This class include mixed color barley grains of the above classes.

5 Requirement

5.1 General

5.1.1 Each class of barley shall be graded in relation to the degree of defects and impurities present and of admixtures other grains.

5.1.2 Each class of barley shall be sound and clean.

5.1.3 A class of barley, each food grain shall not contain more than 13% of moisture by mass when determined in accordance with the method of test specified in ES ISO 711 or ES ISO 712. For further information on the determination of moisture contents the standard ES ISO 6322 Parts 1, 2 and 3 are also included.

5.1.4 Each class of barley each food grain shall be free from hidden insect infestation, living insect, dead insect fragments, rodent contamination which are visible to the naked eye and when determined in accordance with the method of test specified in ES ISO 6639 Parts 1, 2, 3 and 4.

5.1.5 Each class of food barely shall not contain more than 0.05% by mass of ergot in a sample of 250 g when determined in accordance with the method of test specified in ES 667.

5.1.6 Each class of food barley shall not contain more than 0.02% smut galls or spores when determined in accordance with the method of test specified in ES 667.

5.1.7 Each class of food barley shall not contain more than 0.05% by mass of harmful and/or toxic seeds, bunted grains and ergot when determined in accordance with the method of test specified in ES 667.

5.1.8 Each class of food barley shall not contain any additives, contaminants, abnormals, mouldy or unnatural odor denoting deterioration.

5.1.9 Each class of food barley shall not contain more than 0.05% toxic seeds of crotolaria (Crotolaria spp.) Corn cockle (Agrostemms ghago L.) castor bean (Ricinus communis L.) Jimson weed seeds (Datura spp.) in a sample of 250 g when determined in accordance with the method of test specified in ES 667.

5.1.10 Broken grains of barley shall be separated using test sieves for cereals specified in ES ISO 5223.

5.2 Grades

Each class of barley shall comply with the grade requirements specified in Table 1.

Table 1 Grade requirements for barley

SN	Grading characteristics	Grades				Method of tests
		1	2	3	4	
1	Test mass, kg/hl, min	60	50	40	30	ES ISO 7971-2 ES ISO 7971
	Impurities	Maximum limits, % by mass				
2	Broken kernels	4.0	6.0	8.0	10.0	ES ISO 5223
3	Damage grains (includes shrivelled, sprouted, diseased grains)	2.0	4.0	6.0	8.0	ES 667
4	Other cereals	1.0	2.0	3.0	4.0	ES 667
5	Unsound grains	1.0	1.0	1.0	1.0	ES 667
6	Organic extraneous matter	1.5	1.5	2.5	3.0	ES 667
7	Inorganic extraneous matter	0.5	0.5	0.5	0.5	ES 667
8	Stone	0.2	0.3	0.4	0.6	ES 667

5.3 Pesticide residue limits

Each class of barley grain shall comply with the maximum pesticide residue specified in Table 2. The test method for determining the pesticide residues limits is under preparation.

Table 2 – Maximum pesticide residue limits in barley

Pesticide	Value		Symbols			Footnote
2,4-D	MRL (mg/kg)	0.5				
ALDICARB	MRL (mg/kg)	0.02				
ANILAZINE	MRL (mg/kg)	0.2				
BENTAZONE	MRL (mg/kg)	0.1				
BIFENTHRIN	MRL (mg/kg)	0.05	(*)			Residues are not expected to exceed 0.01 mg/kg
CARBARYL	MRL (mg/kg)	5		Po	T	
CHLOROTHALONIL	MRL (mg/kg)	0.1				
CYPERMETHRIN	MRL (mg/kg)	0.5				
DICHLOFLUAND	MRL (mg/kg)	0.1				
DIQUAT	MRL (mg/kg)	5				
DITHIOCARBAMATES	MRL (mg/kg)	1				
ETHEPHON	MRL (mg/kg)	1				
FLUCYTHRINATE	MRL (mg/kg)	0.2				
FLUSILAZOLE	MRL (mg/kg)	0.1				
GLYPHOSATE	MRL (mg/kg)	20				
IPRODION	MRL (mg/kg)	2				
METHOMYL	MRL (mg/kg)	0.5				
PRIMICARB	MRL (mg/kg)	0.05	(*)			
PROCHLORAZ	MRL (mg/kg)	0.5				
PROPICONAZOLE	MRL (mg/kg)	0.05				
PYRAZOPHOS	MRL (mg/kg)	0.05				
TEBUCONAZOLE	MRL (mg/kg)	0.2				
TERBUFOS	MRL (mg/kg)	0.01	(*)			
TRIADIMEFON	MRL (mg/kg)	0.5				
TRIADIMENOL	MRL (mg/kg)	0.5				

5.4 Mass of 1000 grains

The quality of barley grain shall be determined by the mass of 100 grains in accordance with the method of test specified in ES ISO 520.

6 Sampling

Sampling shall be carried out in accordance with ES ISO 13690 or ES ISO 6644.

7 Packing

Barley food grain shall be packed in suitable, clean, sound and moisture proof containers (packages) as specified in ES 666.

8 Labelling

8.1 Each container of barley shall be labelled with the following information:

a) Name of the grain crop ;

b) Name and address of producer, importer / exporter;

c) Crop year ;

d) Class and grade of the grain ;

e) Country of origin ;

f) Net mass in kilograms ;

g) Batch or identification code ; and

h) Any other requirements required by the purchaser.

8.2 Marking

Each container containing barley grain that is in compliance with this Ethiopian Standard shall bear the quality mark upon approval by the quality and standard Authority of Ethiopia (QSAE).

9 Compliance with the standard

A lot of barley grain shall be deemed to comply with this Ethiopian Standards if upon inspection and testing the provisions in clause 4, 5 and 9 are satisfied.

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Ethiopian Standards Agency

Organization and Objectives

The Ethiopian Standards Agency (ESA) is the national standards body of Ethiopia established in 2010 based on regulation No. 193/2010.ESA is established due to the restructuring of Quality and Standards Authority of Ethiopia (QSAE) which was established in 1970.

ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check weather goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational Institutions, research institutes, government organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/ or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes.
Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices. A catalogue of Ethiopian Standards is also available freely and can be accessed in from our website.

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International Involvement
ESA, representing Ethiopia, is a member of the International Organization for Standardization (ISO), and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the international Electro-technical Commission (IEC) and American Society for Testing and Materials (ASTM).It is a founding member of the African Regional Organization for standardization (ARSO).

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